

# Foreign-Owned Capital and Endogenous Tariffs

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The increase in investment abroad during the past two decades may help explain the simultaneous worldwide rush toward free trade. The entry of foreign capital may change the political game, increasing openness to international trade no matter what form the foreign capital takes (whether entering by acquiring equity in existing domestic firms or by bringing foreign firms into the host economy) or what its trade orientation (whether it enters the export or import-competing sector).



## Summary findings

During the past two decades there has been an important increase in investment abroad and a worldwide rush toward free trade. Olarreaga argues that the increase in investment abroad may partially explain the worldwide rush toward free trade.

In a model of endogenous determination of trade protection through lobbying — where the government is also concerned about income redistribution among owners of foreign and national factors of production — foreign capital's entry into a host country will probably reduce the endogenous level of protection.

If the elasticity of substitution between labor and capital is small enough, Olarreaga shows, protection cannot increase after the entry of foreign capital, regardless of the form of investment abroad (whether

through the acquisition of existing domestic firms or the entry of foreign firms) or its trade orientation (whether foreign capital enters the export or import-competing sectors).

There will either be increased counterlobbying for protection by the export sector or reduced lobbying for protection in the import-competing sector, because of the scale effect associated with an increase in the equilibrium wage.

If foreign entry occurs in the import-competing sector, protection might increase because of the scale effect, but under reasonable assumptions about the value of the elasticity of substitution between labor and capital, protection will also fall.

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# ***FOREIGN-OWNED CAPITAL AND ENDOGENOUS TARIFFS***

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## **Non-Technical Summary**

Investment abroad has exploded in the last two decades. In 1997, the sum of Foreign Direct Investment (FDI) and foreign portfolio investment was 11 times larger than in the early 1980s. Participation of developing countries as hosts of world FDI was also multiplied by two since 1985. Such an increasingly important phenomenon cannot be ignored when analyzing the determinants of international trade policy.

Trade policy also experienced a significant amount of change during the last two decades. As world FDI flows increased tenfold, an important wave of trade liberalization struck worldwide. Were these two phenomena related? Probably. And they may also have been caused by many common factors. This paper suggests that the entry of foreign capital may change the political game in a way that leads to increased openness to international trade, regardless of the form that foreign capital takes (foreign equity acquisition or entry by foreign firms into the host economy) and its trade orientation (whether foreign capital enters the export- or import-competing sector).

It is shown within a Ricardo-Viner model of lobbying that acquisition of an existing domestic firm cannot lead to higher levels of protection, regardless of foreign capital trade orientation (i.e., whether the acquisition of the existing domestic firm occurs in the import- or export-competing sector). The forces at play are income redistribution from foreign to national owners of factors by reducing the level of protection when foreign capital enters the domestic market. In the case of new entry by foreign firms, it is shown that in the case where the foreign firm enters the export-competing sector, protection also unambiguously falls. The forces at play are increased counter-lobbying by the export-competing sector and reduced pro-lobbying in the import-competing sector due to a scale effect associated with the increase in the equilibrium wage. If foreign entry occurs in the import-competing sector, then protection might increase due also to a scale effect. However, under a reasonable assumption on the value of the elasticity of substitution between labour and capital, it can be shown that protection will also fall.

# 1 Introduction

Investment abroad has exploded in the last two decades. In 1997, world inflows of Foreign Direct Investment (FDI) were 9 times larger than in the early 1980s. During the same period, the sum of FDI and total portfolio investment into the developing world increased 11 times.<sup>1</sup> Participation of developing countries as hosts of world FDI also significantly increased from 6% in 1985 to 15% in 1997.<sup>2</sup> Such an increasingly important phenomenon cannot be ignored when analyzing the determinants of international trade policy.<sup>3</sup> An often-expressed fear is that foreign investors, concerned with the return on their investment, may increase lobbying pressures for tariffs in the host country. An example is the reported lobbying pressures by Multinational Corporations in some host countries during the Europe Agreements (see Messerlin, 1993).

However, as world FDI flows increased tenfold, an important wave of trade liberalization, at the multilateral, unilateral and bilateral level, struck worldwide. Were these two phenomena related? Probably. And they may also have been caused by many common factors. This paper offers a potential explanation for trade liberalization following FDI inflows into a host country. It argues that the significant increase of FDI in host countries changes the political game in a way that leads to increased openness to international trade. Thus, it can partially explain the simultaneous worldwide rush towards free-trade and the surge in capital flows in recent decades.<sup>4</sup>

Hillman and Ursprung (1993) were among the first to introduce the presence of foreign capital into the theory of endogenous protection. They argue that horizontally integrated MNCs tend to be more protectionist than national enterprises, which have no foreign

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<sup>1</sup> Figures are from UNCTC (1998).

<sup>2</sup> FDI, MNC and foreign capital are not synonymous, but our analysis is not based on their differences and we therefore treat them similarly.

<sup>3</sup> Note that during the same period merchandise trade was 'only' multiplied by 3.5 (see WTO, Annual Report 1998, vol. II, p.18-19).

<sup>4</sup> Other papers (e.g., Horstmann and Markusen, 1992) have analysed the opposite question: how does tariff policy affect the level of FDI? It is clear that a complete analysis of the relationship between tariffs and foreign capital should include both questions. This is beyond the scope of this paper. I assume foreign capital as being exogenously given prior to the political game taking place.

production plants.<sup>5</sup> The reason is that horizontally integrated firms have interest in protecting all markets where they own plants, whereas national enterprises only desire protection in the national market, since protection in foreign markets can only hurt their export possibilities. They also show, within an imperfect competition framework, that MNCs' bias towards more protection leads to lower tariffs. This result is essentially driven by the rationale for free-riding à la Olson (1965) in larger groups. While the political economy model developed here by Hillman and Ursprung (1993) focuses on issues related to horizontally-integrated MNCs, in this paper I abstract from these types of problems. Instead, I consider a broader definition of foreign-owned capital that may also apply to portfolio investment or FDI not necessarily done by MNCs. This allows me to build a taxonomy within a general equilibrium setting.<sup>6</sup>

In another study of the effects of foreign capital entry on the endogenous level of protection, Hillman and Ursprung (1996), argue that because of populist sentiment against foreign ownership and the fact that political support increases with the level of protection, the government can only achieve the most liberal trade policy when there is no foreign capital in the "host" country. Thus, protection increases with the entry of foreign capital into the economy. This goes against my main result in this paper. However, their results rely on the idea that there exists a populist sentiment against foreign ownership, from which I abstract. I consider that agents only care for foreign capital entry if it affects prices or income.

An important contribution is by Grossman and Helpman (1996), which focuses on the endogenous determination of FDI and tariffs using the influence-driven approach developed in Grossman and Helpman (1994). In their 1996 paper, FDI is essentially *quid-pro-quo foreign investment* as defined by Bhagwati (1987), where international

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<sup>5</sup> Vertically integrated MNCs, excluded from their analysis, obviously tend to be less protectionist since tariffs increase the costs of intra-firm trade.

<sup>6</sup> Another important difference between this paper and Hillman and Ursprung (1993) is the assumption about market structure. Here the market structure is one of perfect competition whereas Hillman and Ursprung (1993) have Cournot players. The perfect competition assumption probably corresponds more to portfolio investment abroad rather than FDI since the portfolio flows are due to factor rewards differentials where FDI arises when firms are in quest of larger profits abroad due to imperfect markets. The advantage

investment is made in anticipation of changes in the host country's trade policy and with the intention of diffusing a protectionist threat. Though the paper does not focus wholly on the effects of the presence of FDI on tariff levels, it concludes that lower costs of foreign entry yields lower protection. I use the same political-economy framework as in Grossman and Helpman (1996) but focus on different issues. First, I do not consider the specific issues linked to quid-pro-quo foreign investment (home-based foreign firms do not export to the home market from foreign-based subsidiaries or headquarters), but adopt a broader definition of foreign-owned capital. The abstraction from quid-pro-quo FDI implies that foreign- and national-owned firms will lobby for protection in a similar way (as in Hillman and Ursprung, 1993), instead of foreign capital in the import-competing sector trying to diffuse protection. Second, I do not explore the determinants of FDI levels. Thus, foreign capital is exogenous and in fixed supply.

Recent contributions by Ellingsen and Wærnebyrd (1999) and Konishi, Saggi and Weber (1999), which treat FDI as endogenous, also argue that fear of attracting inward-looking FDI into the domestic market may lead domestic lobbies to reduce their pressures for protection. Thus, in equilibrium, tariffs (and FDI) are lower in import-competing sectors. The mechanisms for reducing protection in this paper are different, as again FDI is exogenously given.

One of the important differences between this paper and the above contributions is that it not only concentrates on import-competing FDI, but also export-competing FDI. In a recent study of the Mexican structure of protection, Grether, de Melo and Olarreaga (1999) show that the effects of foreign ownership on the levels of protection are different depending on foreign capital trade's orientation. In this paper, entry of foreign capital into the export-competing sector will have different effects on the equilibrium level of protection than entry by inward-looking foreign capital. Moreover, we not only concentrate on entry by foreign firms, but also explore the case of equity acquisition by foreign capital (as in Hillman and Ursprung, 1996). It turns out that the results from the

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of assuming perfectly competitive markets is that it allows us to analyse the problem within a general equilibrium framework.



model, regardless of the type of foreign capital, are broadly consistent with the recent rush towards free-trade, while capital inflows have surged.

This paper builds a taxonomy of the effects of the entry of foreign capital on the endogenous level of protection within a standard Ricardo-Viner model. To this end, drawing on Cadot, de Melo and Olarreaga (1997),<sup>7</sup> I develop a model of lobbying with general equilibrium interactions on the supply side, in the sense that domestic and foreign owners of specific capital compete for scarce resources in the host economy. These general equilibrium interactions will be important factors in determining the evolution of the level of protection. Two other important determinants will be at play. First, the trade orientation of foreign capital, i.e., whether foreign capital enters the export- or import-competing sector, and second, whether entry of foreign capital occurs through acquisition of existing domestic firms or new entry by foreign firms.

To anticipate the results, it is first shown that acquisition of an existing domestic firm will lead to lower levels of protection when foreign capital enters the import-competing sector and remains unchanged if foreign capital enters the export-competing sector. The main force at play in the first result is income redistribution from foreign to national owners of factors by reducing protection when foreign capital enters the domestic market. In the case of new entry by owners of foreign capital, protection falls when foreign entry occurs in the export-competing sector. The forces at play are, first, increased counter-lobbying by the export-competing sector, which competes for labour in the labour market, and second, reduced pro-lobbying incentives in the import-competing sector due to a scale effect. New entry by owners of foreign capital into the import-competing sector has ambiguous effects. It can be shown, however, that if the elasticity of substitution between labour and capital is sufficiently small, protection also falls.

Section 2 develops the political economy model of endogenous tariff determination in a Ricardo-Viner framework. Section 3 considers the case of foreign equity acquisition,

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<sup>7</sup> Cadot, de Melo and Olarreaga (1997) is itself an extension of Grossman and Helpman (1994a). There exists different approaches to endogenous formation of trade protection in the literature, but as suggested by Helpman (1995), results of alternative approaches tend to converge.

whereas section 4 studies the case of new entry by owners of foreign capital into the import- and export-competing sectors. Section 5 concludes.

## 2 Foreign-owned capital and lobbying

Consider a small open economy with 2 sectors;  $X$  an export sector and  $M$  an import-competing sector.<sup>8</sup> To abstract from consumption effects we assume that consumers' utility function is quasi-linear on the export good  $X$ , which serves as numéraire (units are also chosen so that the export price equals 1). Quasi-linearity of the utility function allows us to abstract from income effects in consumption of good  $M$ .<sup>9</sup> For simplicity it is also assumed that owners of foreign capital do not consume in the host country.<sup>10</sup> Each good is produced using a sector-specific factor (capital) and a mobile factor (labour) under constant returns to scale.

Factor-specific ownership generates lobbying as suggested by the distributive properties of the Ricardo-Viner model. Specific-factor ownership is concentrated to the extent that the individuals making up the lobbies consider their share of consumer surplus to be negligible. However, protectionist policies in the import sector do affect the export sector profits through endogenous changes in the wage rate; thus owners of specific capital in the export sector also have incentives to lobby, but against tariffs in the import sector.<sup>11</sup> A share of the sector specific factors is foreign-owned, so that sector specific capital is essentially mobile across countries but not across sectors.<sup>12</sup> Owners of foreign capital also lobby the government to defend their interests. It is assumed throughout that they are

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<sup>8</sup> The appendix of Olarreaga (1997) develops the n-good version of the model.

<sup>9</sup> The choice of a quasi-linear utility function in a two-good model may seem awkward, but this is done only to simplify the presentation. As shown in the appendix of Olarreaga (1997) the model can be easily extended to an n-good model without modifying the main results. When the quasi-linearity of the utility function becomes a crucial assumption, it will be explicitly acknowledged.

<sup>10</sup> To allow owners of foreign capital to consume in the host country does not change the results so long as they have the same preferences as national consumers.

<sup>11</sup> The export sector can also lobby for export subsidies but for the simplicity of exposition we assume no export subsidies. In any event, the simplification is immaterial in a 2-good economy. I also abstract for intermediate goods issues. Cadot et al. (1997) develops this but abstracts from foreign-owned capital.

<sup>12</sup> This may be justified by the fact that factor owners face smaller adjustment costs when they geographically reallocate their production plants than when they shift into a new sector.

as efficient in their lobbying activities as owners of national capital. Labour is not organised.

As in Grossman and Helpman (1994), all lobbies move simultaneously as multiple principals in the political game by facing their common agent, the government, with contribution schedules  $C_i(q)$  conditioned on the domestic price of the import good  $q (i = X, M)$ . The government then sets a tariff on the import good yielding the domestic equilibrium price, which is the best response to the lobbies' contribution schedules. Formally, the government maximises an objective function  $V$ , which combines political contributions and *national* social welfare. The latter reflects the government's concern for the average voter, and the former the government's concern for political campaign contributions (the weight on social welfare being  $a \geq 0$ ):<sup>13</sup>

$$V(q) = \sum_i C_i(q) + aW(q) \quad (1)$$

where  $C_i(q)$  is lobby  $i$ 's contribution schedule and  $W(q)$  stands for *national* social welfare as a function of prices.

Let  $\pi_i(q)$  be the aggregate profit function for sector  $i$  (i.e., the income of owners of specific capital to sector  $i$ ). Profits in sector  $X$  depend only indirectly on the price of the import good, through the endogenous adjustment of the wage rate  $w$ . Then provided that an interior solution to the government's problem exists and assuming as in Grossman and Helpman (1994) that the contribution schedules are 'locally truthful' (i.e., that at equilibrium the slope of contribution schedules is the same as the slope of the lobbies' profit function), the first-order condition determining the domestic price of the import good  $i$  is:

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<sup>13</sup> In this setting, there is no room for free-riding à la Olson. Note however, that the empirical and theoretical evidence on free-riding in larger groups is mixed as discussed by Bilal (1998).

$$V_q = \frac{\partial V(q)}{\partial q} = \sum_i \frac{\partial \pi_i(q)}{\partial q} + a \frac{\partial W(q)}{\partial q} = 0 \quad (2)$$

We first calculate the lobbying effect, i.e., the first term in (2), using Hotelling's lemma

$$\frac{\partial \pi_i}{\partial q} = 1_{\{i=M\}} y_M^{ag} - \ell_i \frac{\partial w}{\partial q} \quad (3)$$

where  $1_{\{i=M\}}$  is an indicator function taking on the value 1 when  $i = M$  and zero otherwise;  $y_M^{ag}$  is total production of the import good that includes foreign owned firms production. Thus, the effect of a change in  $q$  on aggregate political contributions (i.e., on producer profits in both sectors) is

$$\sum_i \frac{\partial \pi_i}{\partial q} = y_M^{ag} - \ell \frac{\partial w}{\partial q} \quad (4)$$

where  $\ell = \sum_i \ell_i = \ell_M + \ell_X$ .

Let us now determine the effect on social welfare (the second term in (2)) of a change in the import good price. At any point, the *national economy* is characterized by its income-expenditure identity, namely<sup>14</sup>

$$e(1, q, W) \equiv r(1, q, \mathbf{k}^{na}, \mathbf{k}^f, \ell) + T(q) \quad (5)$$

where 1 is the price of the export good (i.e., the numéraire),  $e$  is the *national* expenditure function,  $r$  is the *national* revenue function (or Gross National Product),  $T$  is the *aggregate* tariff revenue function,  $\mathbf{k}^{na}$  is the vector of sector specific national capital and  $\mathbf{k}^f$  if the vector of foreign capital in the host country. Note that national and foreign

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<sup>14</sup> As I am only concerned with national welfare, I exclude from the national revenue function,  $r$ , foreign-owned capital.

capital enter separately into the national revenue function. Finally  $\ell$  is total fix labour supply. All factors, national and foreign, are in fixed supply. Differentiating this identity with respect to  $q$ , letting  $e_q$  and  $r_q$  stand respectively for the partial derivatives of the expenditure and revenue functions with respect to  $q$  and  $e_w$  stand for the partial derivative of the expenditure function with respect to the level of utility (i.e., the inverse of the marginal utility of income), gives

$$e_q + e_w \frac{\partial W}{\partial q} = r_q + \frac{\partial T}{\partial q} \quad (6)$$

Using Shephard's and Hotelling's lemmas together with the fact that the marginal utility of income is one (given the quasi-linear utility function), gives

$$\frac{\partial W}{\partial q} = -m^{na} + \frac{\partial T}{\partial q} \quad (7)$$

where  $m^{na} = c_M(q) - y_M^{na}[q, w(q)]$  ( $c_M$  and  $y_M^{na}$  are respectively *national* consumption and *national* production of the import good). Thus  $m^{na}$  stands for national ‘imports’. Note that the notion of national imports is only hypothetical as actual imports equal aggregate imports ( $m^{ag} = c_M(q) - y_M^{ag}[q, w(q)]$ ). National imports stand for the hypothetical level of imports in the absence of foreign capital and had prices been equal to actual domestic prices.<sup>15</sup>

Choose units so that all international prices are equal to 1. Then  $t = q - 1$  is the tariff in ‘specific’ or ‘ad-valorem’ form; tariff revenue is then  $T(q) = tm^{ag}$ , so that

$$\frac{\partial T}{\partial q} = m^{ag} + t \frac{dm^{ag}}{dq} \quad (8)$$

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<sup>15</sup> See Bhagwati and Brecher (1980) for the same definition. Note that here consumption at the aggregate and hypothetical national levels are identical given the quasi-linear utility function.

where  $dm^{ag}/dq = \partial m^{ag}/\partial q + \partial m^{ag}/\partial w \partial w/\partial q$ . Substituting (8) into (7), yields:

$$\frac{\partial W}{\partial q} = m^{ag} - m^{na} + t \frac{dm^{ag}}{dq} \quad (9)$$

Substituting (4) and (9) into (2) yields:

$$V_q = \left[ y_M^{ag} - \ell \frac{\partial w}{\partial q} \right] + a \left( m^{ag} - m^{na} + t \frac{dm^{ag}}{dq} \right) = 0 \quad (10)$$

The term in square brackets represents the influence of political factors in the determination of the import tariff, while the term in parenthesis represents the influence of efficiency (social welfare) factors.

Rewritten in elasticity form and rearranged, (10) becomes

$$\frac{t}{q} = \frac{1}{\varepsilon_q^{m^{ag}}} \left( \frac{\left( y_M^{ag} - \frac{w}{q} \varepsilon_q^w \ell \right)}{a m^{ag}} + \frac{(m^{ag} - m^{na})}{m^{ag}} \right) \quad (11)$$

where  $\varepsilon_q^w$  is the elasticity of the wage with respect to a change in the price of the importable ( $q$ ) and  $\varepsilon_q^{m^{ag}}$  is the general equilibrium price elasticity of import demand in absolute value.<sup>16</sup> The term outside brackets stands for the usual Ramsey pricing rule; the higher is the price elasticity of import demand (here we include the general equilibrium effect through the wage on import demand). The first term inside brackets is the lobbying rationale for the tariff which includes both pro-lobbying by the import sector and counter-

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<sup>16</sup> Note that if we exclude the general equilibrium wage effect ( $\varepsilon_q^w = 0$ ) and we assume no foreign capital ( $m^{na} = m^{ag}$ ), so that there is no gap between national and aggregate imports, equation (11) becomes Grossman and Helpman (1994a) optimal tariff.

lobbying by the export sector. It is divided by the weight given to social welfare in the government's objective function and obviously the larger is  $\alpha$ , the smaller the politically determined tariff. The second term inside brackets captures the trade distortion introduced by the entry of foreign capital. The presence of foreign capital implies that part of what is consumed in the host economy is now “imported” from foreign producers in the host country and therefore is not subject to a tariff. This in turn implies that it does not generate any tariff revenue.<sup>17</sup>

For tractability, from now on I assume that all sectors have identical real wage elasticities of labour demand. Then it can be shown that  $\varepsilon_q^w = \ell_M / \ell$ .<sup>18</sup> Substituting this result into (11) yields:

$$\frac{t}{q} = \underbrace{\frac{1}{\varepsilon_q^{m^{ag}} m^{ag}}}_{\text{Ramsey pricing}} \left( \underbrace{\frac{r_M k_M}{a q}}_{\text{Pro and Counter-lobbying forces}} + \underbrace{m^{ag} - m^{na}}_{\text{Trade distortion or income redistribution}} \right) \quad (12)$$

where  $r_M$  is the endogenous capital remuneration in the import sector and  $k_M$  is the total capital stock in the import sector of the host economy. For exposition purposes let us rewrite (12) as:

$$\frac{t}{q} = \Phi (\Psi + \Omega) \quad \text{where } \Phi = \frac{1}{\varepsilon_q^{m^{ag}} m^{ag}}; \Psi = \frac{r_M k_M}{a q}; \text{ and } \Omega = m^{ag} - m^{na}. \quad (13)$$

Thus,  $\Phi$  is the Ramsey pricing term;  $\Psi$  captures the pro- and counter-lobbying forces and  $\Omega$  captures the trade distortion introduced by the presence of foreign capital.

<sup>17</sup> Alternatively one could see this term as capturing income redistribution from nationals to owners of foreign capital in the host economy (see Bhagwati and Brecher (1980), Schweinberger and Vosgereau (1997) and Olarreaga (1998) for examples within a welfare maximising context with more general demand systems.

<sup>18</sup> See Cadot et al. (1997) for a formal proof. Note that in the case of CES production functions with the same labour/capital elasticity of substitution across sectors, this result always holds, regardless of factor shares.

In the next sections I explore the effects of changes in the presence of foreign-owned capital on the equilibrium tariff given by (13). We will first examine the case of foreign equity acquisition in both the import and export sector and then explore the case of new entry by foreign firm into the import or export sector.

### 3 Foreign equity acquisition of existing domestic firms

To capture the effects of foreign equity acquisition on the endogenous level of protection, we will try to determine the evolution of the right hand side of (13). That is how  $\Phi$ ,  $\Psi$  and  $\Omega$  change after foreign equity acquisition. We will distinguish between foreign equity acquisition in the export- and import-competing sectors sector.

If foreign capital purchases national firms (or shares) in the export-competing sector, this will have no effect on any of the determinants of (13). All the equilibrium factor prices will remain the same and therefore quantities produced and consumed of the imported good will remain unchanged. This implies  $\Delta\Phi = \Delta\Psi = \Delta\Omega = 0$ . And entry of foreign equity into the export-competing sector will leave the level of protection unchanged.

Foreign equity acquisition into the import sector will also leave factor prices unchanged. However, this will create a gap between goods imported at the aggregate level which remain unchanged and goods imported at the national level. Indeed, following foreign equity acquisition of domestic firms in the import-competing sector, the level of national production in the import-competing sector declines. This leads to an increase of imports at the national level (which are satisfied by the increase in foreign production in the host country). This implies  $\Delta\Omega < 0$ , which by (13) leads to a fall in the level of protection. The rationale is that part of the protection of the import-competing sector is now



redistributing income to foreign-owned capital and thus incentives to protect the import sector are lower.<sup>19</sup>

Foreign equity acquisition of domestic firms cannot therefore lead to an increase in the level of protection. It will remain unchanged if foreign equity acquisition occurs in the export-competing sector and will fall if foreign capital enters the import-competing sector.

#### 4 New entry by foreign firms and the level of protection

Entry by new firms will affect factor prices and produced quantities in the economy. This in turn will lead to changes in the endogenous level of protection. Let's consider in turn the cases of new entry into the export- and import-competing sectors.<sup>20</sup>

New entry by foreign firms into the export-competing sector will lead to an increase in aggregate labour demand, which in turn translates into an increase in the equilibrium wage. This will reduce quantities produced in the import-competing sector and reduce the endogenous level of capital remuneration in this sector. This implies a reduction in  $r_M$ , which leads to  $\Delta\Psi < 0$ , and an increase in  $m^{**}$ , which leads to  $\Delta\Phi < 0$ . The first effect captures an increase in counter-lobbying in the labour market by the export-competing sector and a decline in pro-lobbying activities by the import-competing sector. The second effect captures the increase in the efficiency cost of protection. Indeed given our iso-elastic import demand function, an outward shift in import demand needs to be compensated by an increase in the slope of the import demand function. This increases the efficiency cost of protection for a given tariff by Ramsey pricing rule. Thus these two

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<sup>19</sup> Note that foreign equity acquisition does not lead to any change in national income if nationals are "rationally" compensated for selling their share of domestic firms. This in turn assure that there are no changes in national consumption (at the existing domestic price). Quasi-linearity of the utility function would have also ensured that changes in income would not have affected the level of consumption of the imported good.

<sup>20</sup> Throughout this section, it is assumed that the price elasticity of import demand remains the same after the entry of new firms in the market, i.e., import demand are iso-elastic.

forces push for a lower level of protection. Note that if aggregate imports increase, there is no gap between imports at the aggregate and the national level since there is no foreign production of the imported good in the host country. This implies that the last term in (13) remains unchanged ( $\Delta\Omega = 0$ ).

To summarise, after new entry by foreign firms into the export-competing sector, the equilibrium level of protection declines due to an increase in counter-lobbying forces by the export sector competing in the labour market, a decrease in pro-lobbying forces by the import sector, and an increase in the efficiency cost of protection for a given tariff.

New entry by foreign firms in the import competing sector has ambiguous effects on the level of protection. However, it can be shown that if the elasticity of substitution between capital and labour in the import-competing sector is smaller than the share of labour in output, then protection will fall after the entry of new firms into the import-competing sector.

To see this, let us rewrite equation (13) as:

$$\frac{t}{q} = \Phi\Psi + \Phi\Omega \quad \text{and} \quad \Delta\left(\frac{t}{q}\right) < 0 \Leftrightarrow \Delta(\Phi\Psi) + \Delta(\Phi\Omega) < 0 \quad (14)$$

Now, first note that after the entry of new foreign firms into the import-competing sector, imports at the aggregate level,  $m^{ag}$ , fall as production in the host country increases. On the other hand, national production in the import-competing sector declines as the increase in the equilibrium wage associated with entry of foreign capital into the economy leads to a fall in national production. This in turn implies that national imports increase. These two effects imply that the trade distortion term,  $\Omega$ , declines, i.e.,  $\Delta\Omega < 0$ , which calls for a lower tariff based on income redistribution effects.

The Ramsey pricing term will increase due to the fall in aggregate imports. Again, the reason is that given the constant price elasticity import demand function an inward shift

of the import demand curve needs to be accompanied by a reduction in the slope of the import demand curve. This in turn implies that the efficiency loss associated with the same tariff is lower, which calls for a tariff increase, i.e.,  $\Delta\Phi > 0$ .

Thus, the evolution of the second term on the right hand side of (14) seems *à priori* undetermined, as  $\Delta\Omega < 0$  and  $\Delta\Phi > 0$ . However, straightforward algebra leads to:

$$\frac{\Delta\Phi}{\Phi} = -\frac{\Delta m^{ag}}{m^{ag}} \quad \text{and} \quad \frac{\Delta\Omega}{\Omega} = \frac{\Delta m^{ag} - \Delta m^{na}}{m^{ag} - m^{na}} \quad (15)$$

A quick observation of equation (14) and recalling that  $\Delta m^{ag} < 0$  and  $\Delta m^{na} > 0$  leads to the fact that the percentage change in  $\Phi$  is smaller in absolute value than the percentage change in  $\Omega$ . This implies that the second term on the right hand side of (14) is negative. Thus the combination of the changes in the Ramsey pricing and trade distortion terms after new entry of foreign capital into the import-competing sector calls for a lower level of protection.

Let us now focus on the evolution of the lobbying term,  $\Psi$ . The sign of  $\Delta\Psi$  will depend on the effect that entry by new firms have on total capital revenue in the import-competing sector,  $r_M k_M$ . Capital increases in the import-competing sector given new entry by foreign firms. This in turn will lead to a decline in the endogenous remuneration of capital in the import-competing sector. Again, the sign of  $\Delta\Psi$  will depend on which of these two effects dominates. It is shown in the appendix that in the case of linear homogenous production functions:

$$\frac{\Delta(r_M k_M)}{r_M k_M} = \left[ 1 - \frac{\alpha_M}{\sigma} \right] \frac{\Delta k_M}{k_M} \quad (16)$$

where  $\alpha_M = w \ell_M / q y_M^{ag}$  is the share of labour payments in total revenue in the import-competing sector, and  $\sigma$  is the elasticity of substitution between capital and labour in this sector. From (16), it is easy to verify that the change in capital payments following

foreign entry into the import competing sector will have the opposite sign than the exogenous increase in the capital stock in the import competing sector if  $\sigma < \alpha_M$ . Thus, assuming that the elasticity of substitution is smaller than the share of labour payment in total revenue in the import competing sector, the lobbying term declines, i.e.,  $\Delta\Psi < 0$ . The rationale behind this result is that if it is very costly to replace labour and capital in the production process, then an increase in the capital stock in the import-competing sector will be very costly in terms of the increase in wages. This reduces pro-lobbying forces in the import-competing sector and increases counter-lobbying forces in the export-competing sector.

To sign the evolution of the first term in (14) one has to again compare two effects going in opposite direction. The Ramsey pricing term calls for higher tariff and the lobbying term for lower tariffs under  $\sigma < \alpha_M$ . However, if the elasticity of substitution between labour and capital is sufficiently small then the second effect dominates and the first term of (14) declines with entry by foreign capital into the import competing sector.

Combining this result with the fact that the second term will also decline, leads us to conclude that if the elasticity of substitution between labour and capital is sufficiently small, then the endogenous level of protection will tend to decline after the entry of foreign capital into the import-competing sector.

## 5 Concluding remarks

The increasing importance of capital flows calls for an analysis of their effect on trade policy formulation in host countries. Using a political economy model to study the effects of the entry of foreign capital on protectionist pressures, this paper shows that tariff reductions are much more likely to occur after the entry of foreign capital. Ultimately, the effects on the endogenous level of protection depends on foreign-owned capital trade orientation (whether it enters the import- or the export-competing sector) and on whether

investment abroad takes the form of acquisition of existing domestic firms or new entry into the market.

In the case of acquisition of existing domestic firms, protection will remain unchanged if foreign capital enters the export-competing sector. Acquisition has no effect on the equilibrium prices and quantities in this model and therefore the incentives to lobby and protect remain the same. On the other hand, foreign acquisition of existing firms in the import-competing sector creates a gap between aggregate imports (which remain unchanged) and national “imports” (i.e., the difference between national production and consumption). This trade distortion reduces the incentives to protect the import-competing sector since part of this protection now benefits foreign capital. Thus, foreign acquisition of existing domestic firms in the import-competing sector leads to a decline in the level of protection.

Entry of foreign firms into the export-competing sector also leads to a decrease in the level of protection. This is induced by an increase in counter-lobbying forces in the export-competing sector and a reduction in the pro-lobbying forces in the import-competing sector associated with the wage increase after the entry of new firms in the market leads to a shift in labour demand at the aggregate level. Also, this wage increase naturally causes a decline in the production of the imported good, which in turn leads to a shift in the import demand curve. This, in turn, is associated with an increase in the efficiency cost of a given tariff.

Entry of foreign firms into the import-competing sector has ambiguous effects in the level of protection. However, I showed that for a sufficiently low elasticity of substitution between labour and capital, import protection will fall. This could perhaps be a more reasonable assumption for developing countries where elasticities of substitution tend to be smaller than in developed countries.

Thus, it appears that regardless of the form that investment abroad takes and its trade orientation, trade liberalization should follow an increase in FDI or portfolio investment

abroad, which may partially explain the simultaneous rush towards free trade and the important surge in investment abroad observed during the last two decades.

It is appropriate to conclude with several cautionary notes. First, throughout the paper I considered that foreign capital was exogenously given. A natural extension would be to endogenise the level of foreign capital by introducing the determinants of foreign capital into the analysis. Second, it was also assumed that owners of foreign capital are equally efficient as nationals in their lobbying activities. This may not be the case, providing another channel that could affect the results reached here.

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## Appendix

The objective of this appendix is to show that equation (16) in the paper holds, i.e.:

$$\frac{\Delta(r_M k_M)}{r_M k_M} = \left[ 1 - \frac{\alpha_M}{\sigma} \right] \frac{\Delta k_M}{k_M} \quad (17)$$

The change in the remuneration of capital is given by:

$$\frac{\Delta(r_M k_M)}{r_M k_M} = \frac{\Delta k_M}{k_M} + \frac{\Delta r_M}{r_M} \quad (18)$$

Profit maximization ensure that in equilibrium:

$$r_M = q f_k \quad (19)$$

where  $f_k$  is the marginal productivity of capital. Differentiating (19) for a given domestic price, yields:

$$\Delta r_M = q f_{kk} \Delta k_M \quad (20)$$

where  $f_{kk}$  is the second derivative of the production function with respect to capital,  $k_M$ . Assuming a linear homogenous production function:

$$f_{kk} = \frac{-\ell_M}{k_M} \frac{f_\ell f_k}{\sigma y_M^{ag}} \quad (21)$$

Profit maximization implies:

$$f_\ell = \frac{w}{q} \quad \text{and} \quad f_k = \frac{r}{q} \quad (22)$$

Substituting (22) into (21), the result into (20), and finally into (18) yields (17).



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